

This listing of claims will replace all prior versions, and listings, of claims in the application:

1 Claim 1 (currently amended): A method of processing a
 2 plurality of ~~Z-vectors~~ Z-vectors, each ~~Z-vector~~ Z-vector
 3 including Z elements, each element including K bits,
 4 where Z is a positive integer greater than 1 and K is a
 5 positive integer ~~greater than zero~~, the plurality of ~~Z~~
 6 ~~vectors~~ Z-vectors corresponding to a binary codeword,
 7 portions of said binary codeword having a direct mapping
 8 relationship to a plurality of transmission units, said
 9 plurality of ~~Z-vectors~~ Z-vectors being stored in a set of
 10 D memory arrays, where D is an integer greater than zero,
 11 each memory array including Z rows of memory locations,
 12 each memory location of a row corresponding to a
 13 different array column, each array column corresponding
 14 to a different one of said plurality of Z-vectors ~~Z~~
 15 ~~vectors~~, each ~~Z-vector~~ Z-vector identifying one column in
 16 each of said D memory arrays, the method comprising:
 17 generating a series of sets of control information,
 18 each set of control information including:
 19 ~~i) a transmission-unit identifier;~~
 20 ~~++i) i) a Z-vector Z-vector identifier;~~
 21 ~~++ii) ii) a row identifier; and~~
 22 for at least one generated set of control
 23 information:
 24 reading P times K divided by D bits, where P is
 25 a positive integer ~~greater than zero~~, from each column
 26 identified by the ~~Z-vector~~ Z-vector ~~that is~~ identified by
 27 the ~~Z-vector~~ Z-vector identifier included in said at
 28 least one generated set of control information.

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1 Claim 2 (original): The method of claim 1,
2 wherein said method of processing is performed by a
3 transmission device prior to transmission of said
4 transmission units;
5 wherein D is 1; and
6 wherein K is 1.

1 Claim 3 (original): The method of claim 2, further
2 comprising:
3 for said at least one generated set of control
4 information:
5 generating from said P bits read from memory, a
6 portion of the transmission unit identified by the
7 transmission unit identifier included in said at
8 least one generated set of control information..

1 Claim 4 (currently amended): The method of claim 3,
2 wherein said plurality of ~~Z-vectors~~ Z-vectors
3 includes n of said plurality of Z-vectors ~~Z-vectors~~,
4 where n is a positive integer greater than 1; and
5 wherein generating a series of sets of control
6 information further includes:
7 incrementing a ~~Z-vector~~ Z-vector identifier
8 value by n divided by M, where M is the number of
9 portions of the transmission unit having a direct
10 mapping relationship to a portion of the binary
11 codeword said portion of the binary codeword
12 including M times P bits.

1 Claim 5 (original): The method of claim 4,
2 wherein each portion of a transmission unit is a
3 symbol; and

4 wherein the transmission unit is a dwell.

1 Claim 6 (currently amended): The method of claim 3,
2 wherein generating a series of sets of control
3 information further includes:

4 incrementing the ~~z-vector~~ z-vector identifier value
5 M times;

6 after incrementing the ~~z-vector~~ z-vector value M
7 times:

8 i) resetting the ~~z-vector~~ z-vector identifier
9 value to the ~~z-vector~~ z-vector identifier value
10 existing at the start of said incrementing; and
11 ii) incrementing a row identifier value by P.

1 Claim 7 (currently amended): The method of claim 6,
2 wherein generating a series of sets of control
3 information further includes:

4 after incrementing the row identifier value Z
5 divided by P times, where Z divided by P times is an
6 integer,

7 setting the row identifier value to zero; and

8 incrementing the ~~z-vector~~ z-vector identifier value
9 by a preselected positive integer value.

1 Claim 8 (original): The method of claim 7, wherein said
2 preselected positive integer value is one.

1 Claim 9 (original): The method of claim 2, wherein said
2 binary codeword is a low density parity check codeword.

1 Claim 10 (original): The method of claim 1,

2 wherein said method of processing is used to process
3 received transmission units; and

4 wherein K is an integer greater than zero and is a
5 number of bits used to represent a soft value
6 corresponding to one bit of said binary codeword.

1 Claim 11 (original): The method of claim 10, where D is
2 equal to K or 1.

1 Claim 12 (original): The method of claim 11, further
2 comprising:

3 for said at least one generated set of control
4 information:

5 supplying the P bits read from memory to a
6 demodulator.

1 Claim 13 (currently amended): The method of claim 10,
2 further comprising:

3 for said at least one generated set of control
4 information:

5 generating_L from said P bits read from memory,
6 a portion of the transmission unit identified by the
7 transmission unit identifier included in said ~~each~~
8 generated set of control information.

1 Claim 14 (currently amended): The method of claim 13,

2 wherein said plurality of ~~Z-vectors~~ Z-vectors
3 includes n of said ~~Z-vectors~~ Z-vectors, where n is a
4 positive integer greater than 1; and

5 wherein generating a series of sets of control
6 information further includes:

7 incrementing a ~~Z-vector~~ Z-vector identifier
 8 value n divided by M , where M is the number of
 9 portions of the transmission unit having a mapping
 10 relationship to a portion of the binary codeword
 11 said portion of the binary codeword including M
 12 times P bits.

1 Claim 15 (currently amended): The method of claim 13,
 2 wherein generating a series of sets of control
 3 information further includes:
 4 incrementing a row identifier value by P
 5 incrementing the ~~Z-vector~~ Z-vector identifier value
 6 M times;
 7 after incrementing the ~~Z-vector~~ Z-vector value M
 8 times:
 9 i) resetting the ~~Z-vector~~ Z-vector identifier
 10 value to the ~~Z-vector~~ Z-vector identifier value
 11 existing at the start of said incrementing; and
 12 ii) incrementing a row identifier value by P .

1 Claim 16 (currently amended): The method of claim 15,
 2 wherein generating a series of sets of control
 3 information further includes:
 4 after incrementing the row identifier value Z
 5 divided by P times, where Z divided by P times is an
 6 integer,
 7 setting the row identifier value to zero; and
 8 incrementing the ~~Z-vector~~ Z-vector identifier value
 9 by a preselected positive integer value.

1 Claim 17 (original): The method of claim 16, wherein
 2 said preselected positive integer value is one.

1 Claim 18 (original): The method of claim 10, wherein
 2 said binary codeword is a low density parity check
 3 codeword.

1 Claim 19 (currently amended): An apparatus for
 2 processing a plurality of ~~Z-vectors~~ Z-vectors, each ~~Z~~
 3 vector including ~~Z~~ elements, each element including ~~K~~
 4 bits, where ~~Z~~ is a positive integer greater than 1 and ~~K~~
 5 is a positive integer ~~greater than zero~~, the plurality of
 6 ~~Z~~ vectors corresponding to a binary codeword, portions of
 7 said binary codeword having a direct mapping relationship
 8 to a plurality of transmission units, said apparatus
 9 comprising:

10 memory including a set of ~~D~~ memory arrays for
 11 storing said plurality of ~~Z-vectors~~ Z-vectors, where ~~D~~ is
 12 an integer greater than zero, each memory array including
 13 ~~Z~~ rows of memory locations, each memory location of a row
 14 corresponding to a different array column, each array
 15 column corresponding to a different one of said plurality
 16 of ~~Z~~ vectors, each ~~Z-vector~~ Z-vector identifying one
 17 column in each of said ~~D~~ memory arrays;

18 memory access control module for generating a series
 19 of sets of control information, each set of control
 20 information including:

- 21 ~~i) a transmission unit identifier;~~
- 22 ~~ii) i) a Z-vector~~ Z-vector identifier;
- 23 ~~iii) ii) a row identifier; and~~

24 means for reading ~~P~~ times ~~K~~ divided by ~~D~~ bits, from
 25 said memory, where ~~P~~ is a positive integer greater than
 26 zero, from each column identified by the ~~Z-vector~~ Z-
 27 vector that is identified by the Z-vector Z-vector

28 identifier included in at least one generated set of
29 control information.

1 Claim 20 (original): The method of claim 1,
2 wherein D is 1; and
3 wherein K is 1.

1 Claim 21 (currently amended): The method of claim 19,
2 wherein said memory access control modules includes:
3 a first counter for generating said Z-vector ~~Z~~
4 ~~vector~~ identifier; and
5 a second counter for generating said row identifier.

1 Claim 22 (currently amended): A machine readable medium
2 comprising machine executable instructions for
3 controlling a computer device to process a plurality of ~~S~~
4 ~~vectors~~ Z-vectors, each ~~Z-vector~~ Z-vector including Z
5 elements, each element including K bits, where Z is a
6 positive integer greater than 1 and K is a positive
7 integer ~~greater than zero~~, the plurality of ~~Z-vectors~~ Z-
8 vectors corresponding to a binary codeword, portions of
9 said binary codeword having a direct mapping relationship
10 to a plurality of transmission units, said machine
11 ~~executable~~ executable instructions including
12 instructions used to control the computer device to:
13 generate a series of sets of control information,
14 each set of control information including:
15 ~~i) a transmission unit identifier;~~
16 ~~ii) i) a Z-vector~~ ii) i) a Z-vector identifier; and
17 ~~iii) ii) a row identifier; and~~
18 for at least one generated set of control
19 information:

20 read P times K divided by D bits, where P is a
21 positive integer greater than zero, from each column
22 identified by the ~~Z-vector~~ Z-vector that is
23 identified by the ~~Z-vector~~ Z-vector identifier
24 included in said at least one generated set of
25 control information.

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